

On a new species of *Prorokia* Böhm from the Jurassic of Kutch (Gujarat, India)

S. K. AGRAWAL AND J. N. RAI

Abstract

A new species of *Prorokia* Böhm, *P. kutchensis*, has been described in this paper. It is the first record of the genus from India.

Introduction

The Habo Series of Kutch has yielded a good number of well-preserved Astartids. They have been hitherto described by Sowerby (1840 a, b), Agrawal (1956 a, b) and Maithani (1968). In Agrawal's collection (B.H.U.) from Jhura dome a specimen, however, remained unidentified. It has now been recognized to belong to *Prorokia* Böhm and agrees well with a few collected by the second author (J. N. R.) from Western Bela Island in the Rann of Kutch. They together form the material for the present paper. The Jhura specimen (No. BA/F/A) being the best has been designated as the holotype of the new species – *Prorokia kutchensis*, named after the district of Kutch.

Systematic description

Class: BIVALVIA Linné, 1758

Order: VENEROIDA Adams and Adams, 1856

Family: ASTARTIDAE d'Orbigny, 1844

Subfamily: ASTARTINAE d'Orbigny, 1844

Type species: *Cardita ovalis* Quenstedt, 1852; OD [= *Pachytypus* Munier-Chalmas (ex Fischer, MS) 1887 (type: *Cardita problematica* Buvignier, 1852; OD)]

Diagnosis: Shell small, thick, subelliptical, equivalve, inequilateral; ornamented with only concentric ribs or threads. Umbones feebly salient, prosogyrous, anterior but not terminal. Lunule and escutcheon absent. Two cardinals and feeble posterior laterals in each valve; 3b largely trigonal, 3a, 2 and 4b long and thin. Anterior adductor scar elongate and deep while posterior one rounded and raised. Pallial line simple. Margin crenulate.

Remarks: The genus is so far known by only a few species from Bathonian to Kimmeridgian in Europe. It is being reported for the first time from India.

Prorokia kutchensis n. sp.

(Figs. 1-3)

Material: Four isolated right valves.

Horizons and Localities: Jhura Bed No. 16 (Callovian), South of Bedi (Holotype No. BA/F/A). [For Jhura sequence, see Agrawal (1956 b and 1958)].

Bela Bed No. 20 (Lower Callovian), South of Gadhada (Paratypes). This bed consists of yellow sandy limestone with bands of golden oolite and interbeds of shales (Rai, 1972). It has yielded ammonoid genera like *Macrocephalites*, *Indocephalites* and *Kinkelinceras* (also Singh and Rai, 1971).

Description: The specimens are small, subtrapezoidal, moderately inflated and slightly truncated in their anterior part. The postero-dorsal margin subparallel to

the ventral one which is almost straight and meets the anterior and posterior margins in rounded-off acute angles. Postero-ventral angle is, however, sharper than the antero-ventral. The ventral one-fifth surface of the shell falls abruptly making an angle of 120° with the rest of the surface. Umbones small, depressed, rather indistinct. An ill-defined ridge runs from umbo to postero-ventral corner. Area posterior to the ridge is feebly depressed and makes an angle of 130° with the rest of the surface. Maximum inflation is a little anterior to this ridge and at a distance of 6 mm from umbones.

The surface is ornamented with fine concentric growth-lines which become coarse and more prominent in ventral half.



Fig. 1.



Fig. 2.



Fig. 3.

Figure 1. *Prorokia kutchensis* n. sp. Right valve, South of Badi (Jhura dome). Holotype (BA/F/A).

Figures 2 and 3. *Prorokia kutchensis* n. sp. Right valves, South of Gadhada (Western Bela Island). Paratypes (B/85/61 and B/149/93 respectively).

All the specimens form part of the collections of Banaras Hindu University (India). The figures are of natural size. The lighting of the specimens for photography is arbitrary with a view to bring out clearly their features.

The interior margin is crenulate. Hinge line characters obscure. However, in one of the paratype (No. B/85/61) two oblique divergent anterior and posterior cardinals become perceptible on grinding.

Dimensions (mm):

	Sp. Number	Length	Height	Inflation
(i)	BA/F/A (Holotype; fig. 1)	17.00	11.00 (64.7%)	9.00 (52.9%)
(ii)	B/85/61 (Paratype; fig. 2)	18.80	12.00 (66.6%)	10.00 (55.5%)
(iii)	B/85/60 (Paratype)	16.5	11.25 (68.0%)	8.50 (51.5%)
(iv)	B/145/93 (Paratype; fig. 3)	15.00	10.75 (71.6%)	8.00 (53.3%)

Remarks: The specimens look somewhat similar to the English specimens of *Prorokia problematica* (Buvignier) described by Arkell (1934, p. 254, pl. 33, fig. 13; 1936, pl. 51, fig. 8) but can be distinguished readily by their subhorizontal outline, greater elongation, lesser inflation together with the region of maximum convexity, and the moderate inclination of the area posterior to the ridge. *P. munieri* de Loriol (1893, p. 109, pl. 8, figs. 8-9), which Arkell considers as a synonym of *P. problematica*, differs from the present species in its form and ornamentation.

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Address of the authors

S. K. AGRAWAL, Department of Geology, Banaras Hindu University, Varanasi 221 005.

J. N. RAI, Central Groundwater Board, New Ramdas Peth, Nagpur 440 010.